



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/738,337	12/17/2003	Kenro Ohsawa	OOCL-32/CON (2TS-00S0337-	9711
26479	7590	05/23/2006	EXAMINER	
STRAUB & POKOTYLO 620 TINTON AVENUE BLDG. B, 2ND FLOOR TINTON FALLS, NJ 07724			AMINI, JAVID A	
			ART UNIT	PAPER NUMBER
			2628	

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/738,337

Applicant(s)

OHSAWA, KENRO

Examiner

Javid A. Amini

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 17, 19-21, 23, 26-28, and 32-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Arguments***

Applicant's arguments filed 4/3/2006 have been fully considered but they are not persuasive.

Applicant on page 9 at first paragraph argues that the reference Kreitman does not teach converting input color image data into partial color image data on the basis of gray scale correction data and color conversion matrix data.

Examiner's reply: Kreitman at col. 5, lines 17-44 teaches the transformation units 26 each comprise a geometric transformer 54, a border alpha unit 56 and an intermediate buffer (IBU) 58. Each geometric transformer 54 accesses its assigned section 30 (not shown) of frame buffer 22 and transforms the section according to a transformation matrix  $M_i$  stored within the relevant transformer 54. Each border alpha unit 56 changes the intensity of the portions of the transformed sections 30 (produced by the corresponding geometric transformer 54) in the associated area of overlap 32. Kreitman in fig. 6 obviously illustrates the conversion input color data, see transmitted signal at 52 converted into an image frame.

Examiner's suggestion: Applicant needs to be more explicit about the conversion system in the claimed invention.

Examiner's interpretation regarding to gray scale correction: A series of shades from white to black. Also Gray scale images are often the result of measuring the intensity of light at each pixel, i.e. similar to what Kreitman teaches at col. 5, lines 31-39, that border alpha units 56 reduce the intensity of the image to be projected towards the outer edges of the overlap area 32, fig 7, to which reference is now briefly made, illustrates the changing intensity in an example

Art Unit: 2628

overlap area 32. Line 33 indicates the edge of the border, where the overlap area 32 is to its right and the non-overlap area, labeled 31, is to its left. Within the non-overlap area 31, the intensity remains at 100%. Within the overlap area 32, the intensity is gradually reduced to 0%. Kreitman at col. 5 lines 63-67; and col. 6, lines 1-2 teaches partial color image data as the line pattern generator 60 produces lines in the overlap areas 32, as shown in fig. 8. The lines are produced by providing signals, to the border alpha units 56, whose intensities are high only in a small portion of the overlap area 32, which is controlled by the respective border alpha unit 66. The remaining overlap area has zero intensity and thus, nothing is displayed for those areas, see also fig. 9 for the translation and scaling matrix T to matrix P.

Applicant on page 9 at third paragraph argues that claim 17 has been amended to include the subject matter of canceled claim 18, and because claim 18 was not subject to an art-based rejection. Thus, claim 17 is now in condition for allowance.

Examiner's reply: From previous office action on page 2 under claims objected, claim 18 on amendment dated 8/9/2005 is referring to a claim 3, and on page 2 of the same amendment Applicant canceled claims 1-14. That means claim 18 was depending on canceled claim that is why Examiner objected to the claim, therefore, now claim 17 lines 13-14 reads ... bias correction data provided according to a position in the one color image. Kreitman at col. 6, lines 36-38 teaches when two lines overlap; the viewer will see a color change to the color which is the combination of the two colors. Examiner's interpretation: each line has one color image.

Examiner encourages Applicant to schedule an interview.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15, 17, 19-21, 23, 26-28, and 32-39 rejected under 35 U.S.C. 103(a) as being unpatentable over Kreitman et al. US. 5,956,000, and further in view of Mayer, Theodore PCT WO 98/26578 (hereinafter refers as a Mayer).

1. Claims 15, 17 and 22-24.

Kreitman illustrated in Fig. 3A a frame of plurality of projectors (partial color image). Also Kreitman illustrates in Fig. 6A, a generic receiver (#52), which receives the transmitted signal and converts it to an image frame.

Kreitman silences about synthetically displayed as one color image ... However, Mayer in fig. 2 illustrates 304 a single color selected and at 310 processed all colors i.e. Red, Green, Blue or gray scale. The step of claim 15 lines 7-11 is obvious since projectors are combination of partial color images and displayed as a color image of one frame that resulted from image data conversion or correction. Also Kreitman discloses in (col. 2, lines 7-10) that, first measures the misalignments (where the conversion or correction input color required), in a calibration operation (where adding or mixing the intensity of the misalignment in order to determine the transformation corresponding to each projection unit), and then utilizes the misalignment measurements to determine the transformations for each section of the image. Kreitman in fig. 2

Art Unit: 2628

(#22) illustrates a frame buffer. Re. claim 7, that claims an image data conversion means for correcting a bias of input color image data. Applicant in the specification on pages 3-4 lines 23-27; 1-5 respectively, discloses the image data conversion comprises correction for correcting a bias of the input color image data so as to display the partial color images on a predetermined set bias in the plurality of partial color image display. When the correction for correcting the bias is provided, a case wherein the display color image data input to the partial color image display has a value smaller than the bias and cannot be reproduced is eliminated or reduced. Examiner interpretation: Applicant sets a threshold as different bias in claim 9, or as nonuniformities in claim 11, or as range of luminance in claim 13, for example: if the intensity is high means the area is non-overlap area, and if the intensity is low means the area is overlap area. See Kreitman in col. 5, lines 27-38 teaches each border alpha unit 56 changes the intensity of the portions of the transformed sections 30 (produced by the corresponding geometric transformer 54) in the associated area of overlap 32. Typically, border alpha units 56 reduce the intensity of the image to be projected towards the outer edges of the overlap area 32. FIG. 7, to which reference is now briefly made, illustrates the changing intensity in an example overlap area 32. Line 33 indicates the edge of the border, where the overlap area 32 is to its right and the non-overlap area, labeled 31, is to its left. Within the non-overlap area 31, the intensity remains at 100%. Within the overlap area 32, the intensity is gradually reduced to 0%. The advantages of Kreitman invention over applicant's invention are providing a system for projecting large format images at a relatively high resolution, and also does not require expensive projection units nor an expensive housing to hold the projection units in exact alignment nor an expensive mechanical calibration operation.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute applicant's described structure, for that described in the Kreitman and Mayer. By modifying Mayer's invention into Kreitman's invention, e.g. to establish accurately a portion of images overlap, and to determine a desired synthesis result on a large display system matching arrayed projectors to produce a composite raster image projected by the projectors on a projection screen and having consistent red, green and blue color values.

Regarding claims 19-21, Kreitman in col. 5, lines 27-38 teaches each border alpha unit 56 changes the intensity of the portions of the transformed sections 30 (produced by the corresponding geometric transformer 54) in the associated area of overlap 32. Typically, border alpha units 56 reduce the intensity of the image to be projected towards the outer edges of the overlap area 32. FIG. 7, to which reference is now briefly made, illustrates the changing intensity in an example overlap area 32. Line 33 indicates the edge of the border, where the overlap area 32 is to its right and the non-overlap area, labeled 31, is to its left. Within the non-overlap area 31, the intensity remains at 100%. Within the overlap area 32, the intensity is gradually reduced to 0%.

2. Claims 23, 26-28, 33, 35

Kreitman is silenced about regarding claim 23, lines 13-15, claims ... nonuniformity correction coefficient data that changes in units of pixel positions and red, green and blue primary colors. However, the nonuniformity correction coefficient data is obvious because Kreitman in fig. 7 illustrates the changing intensity in an example overlap area 32. Line 33 indicates the edge of the border, where the overlap area 32 is to its right and the non-overlap area, labeled 31, is to its left. Within the non-overlap area 31, the intensity remains at 100%.

Art Unit: 2628

Within the overlap area 32, the intensity is gradually reduced to 0%. Examiner interpretation: the claim language claims “..changes in unites of pixel positions ..” i.e. obvious because the changes must take a place at pixel positions. Applicant may specify the ambiguity of the mentioned claim languages.

Mayer in fig. 2 illustrates 304 a single color selected and at 310 processed all colors i.e. Red, Green, Blue or gray scale. Mayer on page 3 lines 1-21 teaches a system for adjusting video signals representing an array of raster images to compensate for projection defects when the array of raster images is displayed by a plurality of projectors to form a composite projected image. The system includes a three dimensional array of smoothing factors, each smoothing factor being associated with a portion of the composite projected image; and circuitry for applying the smoothing factors to the video signals to remove the projection defects resulting from display of the array of raster images. Also teaches a method of matching arrayed projectors to produce a composite raster image projected by the projectors on a projection screen and having consistent red, green and blue color values.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute applicant 's described structure, for that described in the Kreitman and Mayer. By modifying Mayer's invention into Kreitmans' invention, e.g. to establish accurately a portion of images overlap, and to determine a desired synthesis result on a large display system matching arrayed projectors to produce a composite raster image projected by the projectors on a projection screen and having consistent red, green and blue color values.

Regarding claims 37, 34 and 36, Mayer in fig. 3 illustrates observing CCD camera 416. The term luminance is the intensity of light per unit area of its source. Or the luminance is given



Art Unit: 2628

off by a pixel or area on a screen. For example, dark red and bright red would have the same chrominance, but a different luminance. Bright red and bright green could have the same luminance, but would always have a different chrominance. Applicant needs to specify the significant of measuring luminance of colors.

Regarding claim 38 and 35, Kreitman in fig. 7 illustrates the changing intensity in an example overlap area 32. Line 33 indicates the edge of the border, where the overlap area 32 is to its right and the non-overlap area, labeled 31, is to its left. Within the non-overlap area 31, the intensity remains at 100%. Within the overlap area 32, the intensity is gradually reduced to 0%.

Regarding claim 39, Mayer on page 15 lines 34-35 teaches overlapped areas with a NLMF applied could thus better control the effect a single smoothing factor has over program material of any brightness.

Regarding claim 32, Mayer on page 9 lines 33-35 teaches the claim limitations.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 2628

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A. Amini whose telephone number is 571-272-7654. The examiner can normally be reached on 8-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Javid A Amini  
Examiner  
Art Unit 2628

Javid Amini



**Kee M. Tung**  
Primary Examiner